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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/876,151	06/08/2001	Yun-Suk Choi	1567.1009	6719

21171 7590 02/09/2004

STAAS & HALSEY LLP  
SUITE 700  
1201 NEW YORK AVENUE, N.W.  
WASHINGTON, DC 20005

EXAMINER

WEINER, LAURA S

ART UNIT	PAPER NUMBER
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1745

DATE MAILED: 02/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

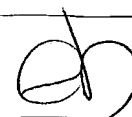
**Office Action Summary**

Application No.

09/876,151

Applicant(s)

CHOI, YUN-SUK



Examiner

Laura S Weiner

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 2,3,5,6,8-17 and 19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 8-12, 16 and 17 is/are allowed.
- 6) ☒ Claim(s) 2,3,5,6 and 19 is/are rejected.
- 7) ☒ Claim(s) 13-15 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

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## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Rejections - 35 USC § 102***

### ***Claim Rejections - 35 USC § 103***

2. Claims 5-6 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Fauteux et al. (5,217,827).

Fauteux et al. teaches in column 1, lines 13-15 and line 67 to column 2, line 17, an electrochemical cell comprising a polymer electrolyte, an anode prepared by providing a layer of lithium metal on a metal foil such as nickel or copper and a cathode which is a composite of an insertion compound, an electronically conductive filler and the polymer electrolyte. Fauteux et al. teaches in column 5, lines 10-20, that the polymer electrolyte comprises polyethylene oxide, propylene carbonate and LiCF<sub>3</sub>SO<sub>3</sub>.

In the event any differences can be shown for the lithium negative electrode product of the product by process limitation, as opposed to the product taught by Fauteux et al., such differences would have been obvious to one of ordinary skill in the art as a routine modification of the product in the absence of a showing of unexpected results. *In re Thrope* 227 USPQ 964; (Fed. Cir. 1985).

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With respect to the product by process limitation, the determination of patentability is based upon the product itself not upon the method of its production. *In re Thrope* 227 USPQ 964; *In re Brown* 173 USPQ 685; *In re Bridgeford* 149 USPQ 55; *In re Wertheim* 191 USPQ 90. Any difference imparted by the product by process limitations would have been obvious to one having ordinary skill in the art at the time the invention was made because where the Examiner has found a substantially similar product as in the applied prior art, the burden of proof is shifted to the Applicants to establish that their product is patentably distinct. *In re Brown* 173 USPQ 685 and *In re Fessmann* 180 USPQ 324.

3. Claims 5, 2-3, 6, 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koksbang (5,411,764) in view of Nishijima et al. (6,534,214).

Koksbang teaches in column 1, line 15 column 2, line 4, that batteries include a lithium anode, a transition metal oxide composite cathode and an electrolyte which includes a lithium salt. A copper or nickel substrate is coated with a thin layer of molten lithium containing material by means of an applicator. Koksbang teaches in column 3, lines 41-65, that the applicator used to apply a layer of molten lithium composition is a transfer roller. Koksbang teaches in column 6, lines 55-68, that the molten material is in a controlled inert atmosphere.

Koksbang discloses the claimed invention except for specifically teaching that the positive electrode comprises a binder and teaching the lithium metal is coated using a doctor blade or using a calendaring process.

Nishijima et al. teaches in column 5, lines 10-30 and 66-67, that it is known to have a positive electrode material formed by mixing a transition metal oxide with a conductive material and a binder such as polyvinylidene fluoride, polytetrafluoroethylene, etc. in a battery comprising a negative electrode comprising metallic lithium.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to coat the lithium material by a doctor blade or using a calendaring process because these processes are well known in the art of coating of electrodes and Koksbang teaches that the material can be used by a transfer roller.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have a positive electrode comprise a binder because one of ordinary skill in the art knows that a binder is used as taught by Nishijima et al. in a battery comprising a metallic lithium anode and a transition metal oxide cathode.

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***Claim Rejections - 35 USC § 112***

4. Claim 19 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 19 is rejected because there is no antecedent basis for "to produce the liquid lithium metal".

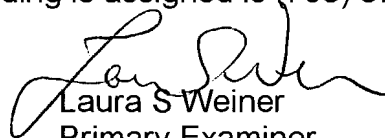
***Allowable Subject Matter***

5. Claims 10, 8, 11-12, 16-17 are allowed.

6. Claims 13-15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura S Weiner whose telephone number is 571-272-1294. The examiner can normally be reached on M-F (6:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

  
Laura S Weiner  
Primary Examiner  
Art Unit 1745

February 2, 2004